AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated hereafter.

Claims:

1.-10. (Canceled).

11. (Original) A fluid reactor comprising:

an outer cylinder;

a rotor having a first annular channel between an outer wall and an inner cylinder, wherein the rotor is housed within the outer cylinder,

the outer cylinder having:

an inner annular wall defining a circular hollow for receiving the inner cylinder of the rotor, and

an outer annular wall defining a second annular channel between the outer annular wall and inner annular wall for receiving the outer wall of the rotor;

an inlet in fluid communication with the second annular channel; and

an outlet in fluid communication with the circular hollow.

12. (Original) The reactor of claim 11, wherein the outer cylinder further comprises an energy source.

13. (Original) The reactor of claim 12, wherein the energy source provides electromagnetic energy.

14. (Original) The reactor of claim 13, wherein the electromagnetic energy irradiates fluid in the reactor.

15. (Original) The reactor of claim 14, wherein the electromagnetic energy is provided in an anti-microbially effective amount.

16. (Original) The reactor of claim 12, wherein the energy source is a lamp for providing ultraviolet light.

17. (Original) The reactor of claim 11, wherein Taylor-Couette flow is established in fluid within the reactor when the rotor is rotated within the outer cylinder.

18. (Original) The reactor of claim 11, wherein the Taylor-Couette flow comprises a plurality of circumferential vortices within the first and second annular channels.

19. (Original) The reactor of claim 11, wherein the outer wall of the rotor is transparent.

20. (Original) The reactor of claim 11, wherein the inner and outer annular walls of the outer cylinder comprise an energy source.

21-31 (Canceled).

32. (Currently amended) A method of disinfecting a fluid comprising:

forming Taylor vortices in [[a]] an edible fluid comprising an organism, wherein ~~the Taylor number of~~ the edible fluid has a Taylor number of [[is]] between about 40 to about 400; and

irradiating the fluid with an anti-microbial amount of energy, wherein the ratio of penetration depth of the energy to a velocity boundary layer of the edible fluid is less than about 1.

33. (Original) The method of claim 32, wherein the anti-microbial amount of energy is about 400 J/m^2.

34. (Original) The method of claim 32, wherein the Taylor number is from about 75 to about 125.

35. (Original) The method of claim 32, wherein the organism comprises bacteria, fungi, protozoa, viruses, or a combination thereof.

36. (Original) The method of claim 32, wherein the energy is electromagnetic energy.

37.-38. (Canceled).

39. (Currently amended) The method of claim [[38]] 32, wherein the edible fluid comprises milk, fruit juice, or a beverage.

40. (Canceled).

41. (Original) The method of claim 32, wherein the ratio of penetration depth of the energy to the velocity boundary layer is from about 0.5 to about 1.